Power Plants use Nitrogen Generators for Multiple Applications

Why Nitrogen Gas Generators?

Pressure Swing Adsorption (PSA) Nitrogen Gas Generators are utilized in a variety of applications throughout the Power industry. Nitrogen is common in Power Plants and is being used for processes such as HRSG Lay-Up, Ammonia Purge, and Natural Gas Purge. Being an inert gas, Nitrogen protects against corrosion of inner walls of boiler tubes, condensers, and wetted parts within Power Plant applications by displacing oxygen and other residual molecules. In the past, high-pressure bottles as well as bulk liquid tanks have been the primary source for Nitrogen, but new technology has come into play. Nitrogen Gas Generators allow you to produce an unlimited supply of Nitrogen, on-demand, at your site, eliminating missed deliveries, escalating costs and contracts. They are also a convenient, safer, and more reliable alternative to delivery and handling of bulky, compressed gas cylinders or tanks.

Nitrogen Purge for HRSG Wet and Dry Boiler Lay-Up

A Power Plant in Northeastern United States recently installed a Nitrogen Generator in two of their combined cycle facilities after realizing the possibility of corrosion in their boilers. The capacities of the plants are 407 / 500 Megawatts and are used for dry and wet lay-ups with one volume purge every 24 hours. One of the facilities is a peaking facility, so the Nitrogen Generator will run more frequently. When the units are offline, they provide a N2 blanket in the boiler drums. The Nitrogen Generator is also used to blanket on the tube side of the feedwater heater during extended outages. Their other plant is a base loaded plant, so the Nitrogen Generator is used for boiler drum blanketing when the unit is offline for an extended period of time. With a Nitrogen Generator in place, operations are running smoothly and their concern for corrosion no longer exists.

ADDITIONAL APPLICATIONS

Ammonia Purge

Some Power Plants use Nitrogen Generators for blanketing ammonia storage tanks. Nitrogen is connected to the ammonia storage tank vapor space to provide a nitrogen blanket on the system. The intent of using a nitrogen blanketing system on aqueous ammonia tanks is to prevent the ingress of air to the tank vapor space during low ambient temperature conditions when the vapor pressure of the ammonia drops below atmospheric pressure.

Natural Gas Purge

An increasing number of Power Plants are utilizing natural gas. When a leak occurs, the site evacuates natural gas using Nitrogen within the piping system before repairs are made to reduce the possibility of explosions. When performing this procedure, the nitrogen fill valve is opened to pressurize the pipe. A pressure gauge is used to monitor pressure loss and check for leaks. Precautions are taken when releasing the purged gas into the atmosphere such as proper ventilation. Being inert, Nitrogen reduces the risk of explosions and extends the life of Power Plant equipment.

Close-up of N2-GEN LPS225 Installation

South-Tek Systems | 2940 Orville Wright Way | Wilmington, NC 28405
p | 888.526.6284 e | info@southteksystems.com w | www.southteksystems.com